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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,983	03/17/2008	Chris Maeding	P30469	7743
7055 7590 02/17/2011 GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191				
EXAMINER WONGWIAN, PHUTTHIWAT				
ART UNIT		PAPER NUMBER		
3741				
NOTIFICATION DATE		DELIVERY MODE		
02/17/2011		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com  
pto@gbpatent.com

# Office Action Summary

**Application No.**

10/599,983

**Applicant(s)**

MAEDING, CHRIS

**Examiner**

PHUTTHIWAT WONGWAN

**Art Unit**

3741

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12/13/2010.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6-25 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 6-25 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. This office action is responsive to the amendment filed on 12/13/2010. Claims 1-5 have been canceled and accordingly claims 6-25 are currently pending in this application.

### ***Response to Arguments***

2. Applicant's arguments filed on 12/13/2011 have been fully considered but they are not persuasive. In response to the argument with respect 112 second paragraph of claim 20 that "one ordinary skilled in the art reviewing the original disclosure and claim 20 would interpret and understanding this claim language". The examiner respectfully disagree because the limitations "at least one resonator comprises a plurality of sleeves at lest one of oriented along a direction" do not make grammatical sense and the term "at least one of" is unclear whether at least one of resonator or at least one of the sleeves.

3. Applicant's arguments with respect to claims 6-13 have been considered but are moot in view of the new ground(s) of rejection.

4. In response to the arguments with respect to Vuillamy reference on page 9-10 that "the Examiner has not indentified any express or implied disclosure in Vuillamy that injector 40 formed in the injection plate actually form a resonator, or that such openings dampen vibration of the combustion chamber.....there in no apparent disclosure in

Villamy of vibrations arising in the described rocket engine for which vibration damping would needed or even desired". The examiner respectfully disagree because the combustion vibrations is inherently occur during operation of the combustor as described by the newly cited reference Mower (US Patent No. 3,200,589, col. 1, line 25-4), Mower further discloses that a resonator 18, 21 (fig. 3, "col. 3, line 55-60, "In the initial phases of combustion...damped by baffles 20 and 21") having an opening 23 (fig. 3) communicating with the pre-chamber 16 (fig. 3), therefore, it is inherent that the combustion instability or vibration will occur in Volley's combustor. Further the injector 40 of Vuillamy acts as a resonator by controlling the fuel injection rate into the combustion chamber, for example reducing the fuel flow through fuel injector 40 will reduce temperature and pressure of the combustor, as a result reducing combustion vibration, therefore, Vuillamy clearly teaches all of the elements as claimed in claims 14-25.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
7. As to claim 20, the limitation "a plurality of sleeves at least one of " does not make grammatical sense and should be changed to "a plurality of sleeves, at least one of the flow sleeve".

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

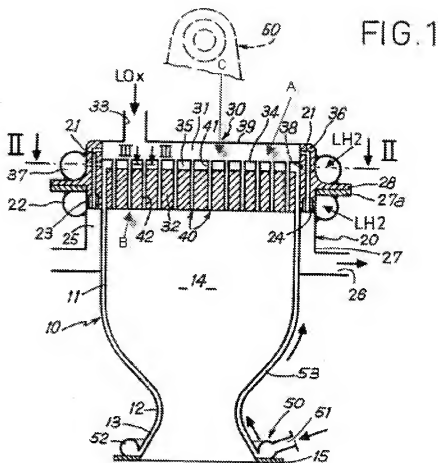
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 6-25 are rejected under 35 U.S.C. 102(b) as being anticipated by

Vuillamy (US Patent No. 5, 404, 715).

10. As to claim 6, Vuillamy discloses a device (fig. 1) for [intended use] damping oscillations of a combustion chamber comprising: at least one resonator structured 132 or 136 (fig. 4) and arranged to dampen vibrations being connected to a pre-chamber 31 (fig. 1), wherein the pre-chamber is connected to a combustion chamber 14 (fig. 1) via at least one passage channel 40 (fig. 1, the channel of 40).



11. As to claims 7-13, Vuillamy discloses the combustion chamber 14 (fig. 1) adjoins an injection head A (fig. 1 above) having at least one injection element 40 (fig. 1), wherein the injection head conducts a fuel flow (col. 7, line 16-20, "a coaxial injector 40 may comprise an outer tube 42 co-operating with an inner tube 41 to define an annular fuel feed channel") into the combustion chamber 14 (fig. 1), wherein the pre-chamber 31 (fig. 1) is arranged upstream of the at least one injection element 40 (fig. 1), wherein the pre-chamber 31 (fig. 1) is arranged in an area of the at least one injection element 34 (fig. 1), wherein the pre-chamber 31 (fig. 1) is in fluid connection with a fuel flow col. 7, line 16-20, "a coaxial injector 40 may comprise an outer tube 42 co-operating with an

inner tube 41 to define an annular fuel feed channel"), wherein the at least one passage channel 40 (fig. 1, the channel of 40) is part of an injection element 34 (fig. 1) and wherein the combustion chamber 14 (fig. 1) is part of a rocket engine (abstract line 1-2, "The rocket engine").

12. Claims 6-8 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Lewis (US Patent No. 3,483,698).

13. As to claim 6, Lewis discloses a device (fig. 1) for [intended use] damping oscillations of a combustion chamber (fig. 1, within 10) comprising: at least one resonator structured 100 (fig. 1) and arranged to dampen vibrations being connected to a pre-chamber 59 (fig. 1), wherein the pre-chamber 59 (fig. 1) is connected to the combustion chamber (fig. 1, within 10) in to dampen vibrations 9fig. 5) via at least one passage channel100 (fig. 1).

14. As to claims 7-8 and 13, Lewis discloses the combustion chamber (fig. 1, within 10) adjoins an injection head 8 (fig. 1) having at least one injection element (fig. 1, inherent, not shown, the injector head will have at least one fuel injector), wherein the injection head conducts a fuel flow (col. 8, line 27-32, "An injector heat 8 is fixed...so that propellants can be directed therethrough") into the combustion chamber, wherein the combustion chamber is part of a rocket engine 2 (fig. 1).

15. Claims 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Mandai (Pub. No. 2002/0152751).

16. As to claim 6, Mandai discloses a device (fig. 1) for [intended use] damping oscillations of a combustion chamber (fig. 1, within 12) comprising: at least one resonator structured 24 (fig. 1) and arranged to dampen vibrations (page 1, paragraph 0006, "to reduce a combustion-driven oscillation") being connected to a pre-chamber 106 (fig. 1), wherein the pre-chamber is connected to the combustion chamber (fig. 1, within 12) in to dampen vibrations via at least one passage channel 24a (fig. 1).

17. As to claims 6-9, Mandai discloses the combustion chamber (fig. 1, within 12) adjoins an injection head 14 (fig. 1) having at least one injection element (fig. 1), wherein the injection head conducts a fuel (fig. 1, "PILOT FUEL") flow into the combustion chamber and wherein the pre-chamber 106 (fig. 1) is arranged upstream of the at least one injection element 14 (fig. 1).

18. Claims 6-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Mower (US Patent No. 3,200,589).

19. As to claim 6, Mower discloses a device (fig. 1-3) for [intended use] damping oscillations of a combustion chamber 3 (fig. 1) comprising: at least one resonator structured 21 (fig. 3) and arranged to dampen vibrations (col. 1, line 43-45, "to dampen tendencies toward combustion instability") being connected to a pre-chamber 16 (fig. 3), wherein the pre-chamber 16 (fig. 3) is connected to the combustion chamber 3 (fig. 3) in to dampen vibrations via at least one passage channel 23 (fig. 3).

20. As to claims 7-13, Mower discloses the combustion chamber 3 (fig. 1) adjoins an injection head 1 (fig. 1) having at least one injection element 24 or 23 (fig. 3), wherein



the injection head conducts a fuel (fig. 3) flow into the combustion chamber, wherein the pre-chamber 16 (fig. 1) is arranged upstream of the at least one injection element 1 (fig. 1), wherein the pre-chamber 16 (fig. 3) is arranged an area of the at least one injection element 18, 23 (fig. 3), wherein the pre-chamber 16 (fig. 3) is in fluid connection with a fuel flow (fig. 1, from 16), wherein the at least one passage channel 23 (fig. 3) is part of an injection element (fig. 3) and wherein the combustion chamber 3 (fig. 3) is part of a rocket engine (col. 1, line 16, "Rocket engine").

### ***Conclusion***

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHUTTHIWAT WONGWIAN whose telephone number is 571-270-5426. The examiner can normally be reached on Monday - Thursday, 7:30am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MICHAEL A. CUFF can be reached on 571-272-6778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. W./  
Examiner, Art Unit 3741

/Michael Cuff/  
Supervisory Patent Examiner, Art Unit 3741